뇌신경재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Prediction of motor function of stroke patient by diffusion tensor imaging study : case report

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Introduction

Diffusion tensor imaging(DTI) is a useful diagnostic tool in rehabillitative medicine. Corticospinal tracts(CSTs) are eloquent pathways responsible for motor function. Displacement, deformation, disruption and disorganization of CST due to stroke may alter the brain fuction and well recognized by changes in fiber bundles on DTI tractography. In our clinical practice, we found that the motor functional defect of patient with a brain lesion could be elucidated with DTI results.

Case

The CST was tracked through two regions of interest placed on the anterior part of the mid pons level and upper pons level. The cut off value for stop tracking was FA < 0.15 and turning angle >60. A 69-year-old female patient with left hemiplegia from a cerebral hemorrhage has been admitted to our hospital for rehabilitation. Her muscle strength of left-side extremities was grade 1/5 by manual muscle test. A brain lesion involving the right basal ganglia was detected on CT. DTI-based fiber-tracting displayed few right CST & transpontine projection to left side(fig. 1, fig. 2)

Discussion

DTI-based fiber-tracking showed significantly decreased fibers of a CST within a stroke lesion. Contralateral muscle strength was significantly impaired. The motor function damage in this case could be explained with DTI-derived CST.

Conclusion

CSTs obtained by DTI with tractography may be consistent with motor function of patients. Therefore, DTI could be useful tool to predict motor function of stroke patients

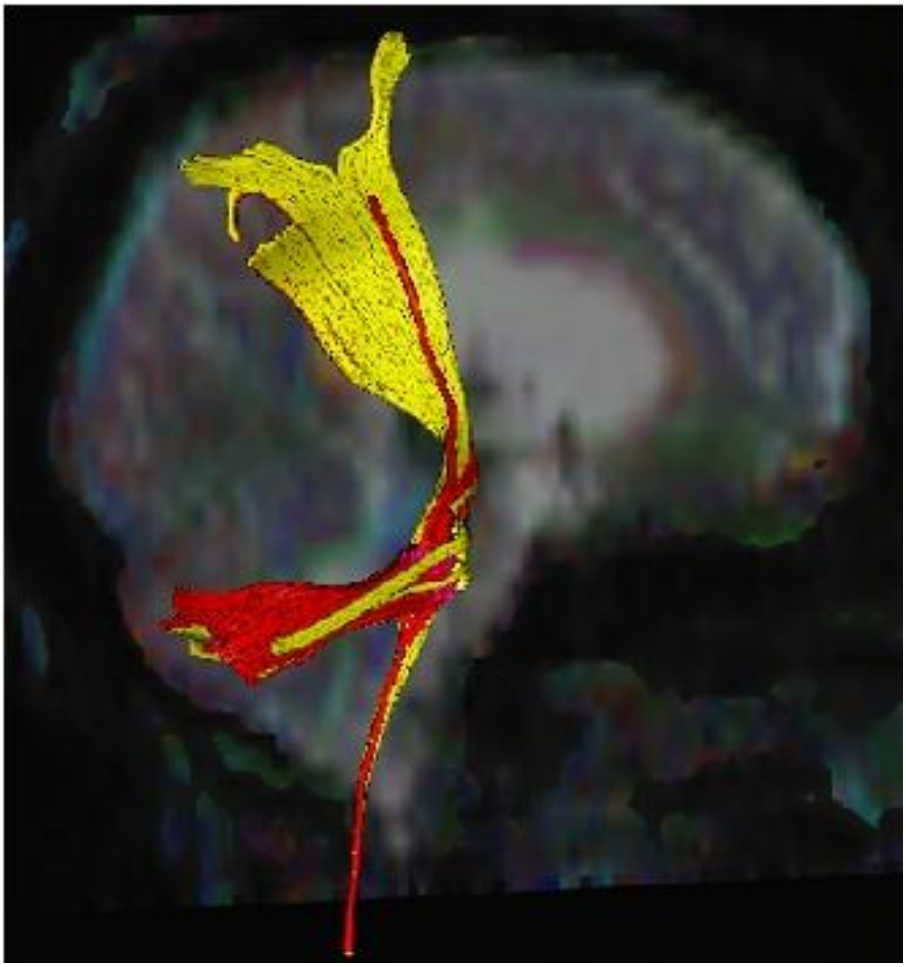

Figure. 1 Corticospinal tract(right, red)

Figure2 Corticospinal tract(anterior view)